

Accelerator Division January EH&S Highlights

Training

- IH presented Lead Safety Training
- RCG presented Internal Group Beam Loss Ion Chamber troubleshooting

EH&S Manual

Updates

- sent word docs of Chapters 6120 and 6121 to Eric Hanson for review, added status update, sent word docs of Chapters 3110 and 3420 to Rusty Sprouse per John Kelly's request, per John Kelly's request (as a result of a tracking system posting), I re-sent comments from the level 3 review of Chapters 2210 and 3510 and Appendix 3510-T9. I finished changes to Chapter 5200 from John Kelly, sent to John for further comments, will be going out for level 3 review, need to post new finding in Tracking System
- finished changes to Chapter 6850 from Mary Gibson, need to make comparison documents and post in tracking system; will be going out for level 2 review
- resolved Director's Council comments from review of Chapter 6410 Laser Safety with Patty Hunt, made necessary changes, ready to be updated in manual, expect to have completed by COB on Friday
- sent comparison pdfs of Chapter 1200 to Sandy for review; changes received from Sandy, requested the chapter be sent out for level 2 review; working on changes to Chapter 1200 from Sandy, will be sent out for level 2 review
- sent Chapter 6850 out for level 2 review, comments requested back by February 12th, need to post new finding in Tracking System
- finished changes to Chapter 6733, sent back to Linda for review, posted status update
- completed review of Chapters 3310 and 3320.
- finished changes to 5300, 5300-T1, and 5300-T2 from Carter; sent out for level 2 review, comments requested back by February 9th, posted status update
- met with the laser safety chapter author, Patty, to resolve the DC comments.
- Updated the color-coded table of chapters/appendices and added comments on current status for any document that is in some state of review. Noted that 38 chapters and 71 appendices are in some state of review (either due for triennial review or are under revision). Twelve of the chapters do not yet have records posted in the tracking system; 18 of the appendices require records. Several of the records already in the tracking system require a status update.

Tracking, Trending, Training - T3

JLab EH&S Tracking System

- Provided Roy a tutorial on logbook applications for the accelerator and SFRI.
- Attended first meeting of the task force addressing web-based information and its coordination. The group learned that some "common use" information gets created multiple times and that the links to this info are inconsistent. An example that we studied was organization charts. Theoretically, there should be one set of org charts and all other references should incorporate the links to these charts. At the authors request, Christina has already deleted the org charts in Chapter 2100 and replaced them with the links to the org charts listed on the Jlab "Divisions & Departments" page (<http://www.jlab.org/lab.html>). The group recommended establishment of a web development "best practices" team to "oversee" the quality and consistency of content authors' pages. Each of us was tasked to develop objectives and suggested membership for this team.

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- Met with R. Whitney and MIS staff for continued planning and development of the JLab web-based EH&S tracking system. We discussed several actions and all but a few were tabled for the near term. One of the tabled actions has to do with a common set of risk codes for use by all JLab staff. This one has been tabled pending the revisions to Chapter 3210. Another change that will be made is to add a field for citing external laws, regulations, and standards applicable to JLab (Column 1 of the WSS set). I was tasked to coordinate a cost estimate with E. Morgan for providing web access to each of the documents since we felt that ready access will facilitate finding the correct citation. I will meet w/ Elois Wednesday morning.
- Request to add a 'postscript' capability for the EH&S tracking system has been approved. Basically the requester was asking for the capability to add status updates to a record after it's action has been completed and the record closed.
- Added the link to the news scroller for the flyer on extension cord safety.
- Bobby wrote an admin piece so that I can update the scrolling menu with new items and delete old ones. The function requires use of html script. Bobby also provided a Help section with common html terms and their functions.
- Submitted 4 ccpr's on tracking system problems. As the system evolves to the JLab design, the new work on the system sometimes creates function errors in the current Acc Div system. Good news is that Bobby is very quick to respond to the problem reports.

Task Hazard Analysis and Technical Work Documents, Hazard Mitigation (IS/IH/RAD)

Test Lab

- T3 assigned serial number to SOP from Tom Powers, CEBAF Replacement Warm Window RF Qualification Testing, A-04-001-SOP; waiting for electronic and hard copies
- T3 e-mailed Tom Powers, reminder about sending electronic copy of SOP A-04-001-SOP
- IH says SOP for the acid neutralization system is now in circulation for signatures. This SOP replaces the TOSP for commissioning of the system.
- SSG reviewed SOP for operation of the 1497 MHz HPA for window testing. Several corrections/concerns were identified and document returned for editing

FEL

- T3 assigned serial number to TOSP from George Biallas, Proof of Principle Trial of Chip Sequestration, A-04-001-TOSP; waiting for electronic copy
- T3 posted Investigation Worksheet and DOE Occurrence Report for FEL Breakroom Minor Shock Incident on DocuShare

General:

- SSG is updating the PSS training documentation.
- IH: the PPE survey was completed using task database developed by HS summer student. We have identified 37 activities that require PPE in some form.
- SSG: HR submitted updated invention description for automated PC-Public Address patent
- RCG: signed off HPP Dosimetry procedures to reflect changes in dosimetry issuance
- RCG: wrote and signed off procedure for assembling Quarterly Groundwater report

Accelerator Division EH&S Highlights
January 2004

Sampling, Surveys, and Support (IS/IH/RAD)

CEBAF

- SSG found source of false trips to Power Permit in the North Linac. The Kicker magnets had a loose connection that would intermittently cause a fail-safe fault. We are looking at redesigning the kicker magnet connections to make them more robust.
- SSG: Kicker modification has gotten a higher priority since it was found that the laser modulation shutdown method for the MPS has a 10% pedestal. An effort is underway to merge the MPS and PSS functions of this device.
- SSG: Funding for the MCC upgrade has been approved. This will affect other projects originally scheduled for the summer shut down.
- IH: Indoor air quality monitoring continues in Building 85 at the request of Harry Fanning. Leading indicator CO2 levels indicate that air quality is adequate. Additional monitoring will be conducted throughout the building. In tandem, Carroll Jones is coordinating duct work cleaning for the building.
- RCG: MCC check source cabinet received and will be installed the week of 1/19
- RCG: Performed investigation for Hall-C access incident that occurred on 1/12, meeting scheduled for agreement on final corrective actions
- RCG: Duratek representative to arrive on 1/8 to assess rad waste costs in moving the rock formation in the RadCon boneyard area.

EEL

- IH: Machine Shop testing for coolant metal and bacterial levels this week. Meeting with Dave McCay on Thursday to start SOP for machine shop coolant use and changeouts.
- IH: Also reviewing the use of a coolant recycling unit for Machine Shop use. This unit would include an ozonator which would reduce bacteria counts. This would eliminate the need for additives. Additives can equal dermatitis, so the overall goal is to eliminate risk of dermatitis with coolants.

ODH System

- SSG: annual Christmas ODH alarm was on schedule. FEL Lab 6 monitor had false alarm.
- SSG: prototype barometrically compensated ODH monitors are being built and tested at this time. Expect delivery at the end of the month.

FEL

- SSG: Gun HV PSS permits are jumpered out to allow troubleshooting of HV controller oscillation.
- SSG: PSS system B failed on a UPS fault. UPS has been bypassed until it can be replaced.
- SSG: Installation meeting for new cryomodule scheduled for Tuesday, Jan 30.
- IH: Ops notified IH group about an ozone odor in the FEL building at 1 pm Saturday. There were no associated beam operations. Ozone odor appeared to be coming from the elevator equipment room. Elevator was taken out of service. Facilities Management followed up this week: there is no ventilation in the equipment room, but no electrical problems were found. Elevator put back in service.

Test Lab CMTF/VTa/ITS

- IH: Non-skid for cryomodule support frame: thanks to Frank Humphrey for acting on this one: he perceived that under wet conditions the skid that holds cryomodules enroute to Oak

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Ridge becomes slippery. He asked IH group to find some non-skid to mitigate the hazard, which is relevant when loading and unloading the cargo

- IH: Acid Neutralization building: Comfort from the cold efforts are ongoing. Work on installation of additional heaters and insulation of all water pipes began last Thursday. IH group assisted with escort of subcontractors for the Production Chemistry group on Friday. Subcontractors working on the pipe insulation managed to set off the safety shower alarm several times on Sunday. John Kennedy and Jennifer Williams responded
- IH: Radcon requested direction for the installation of lead brick shielding in the Vertical Test Area. The brick that was to be used had been donated by Physics Division. The brick had been stored outdoors and had a heavy oxide coating. Brick is unsuitable for use in this condition, and must be acid cleaned and then painted. This is do-able, but will have to happen in the R&D Chem room under an SOP. Suggested that Radcon use Kirksite if possible.
- RCG: Investigating potential of replacing lead shielding with “Kirksite” shielding for VTA dewars
- IH: Mold wipe tests were taken in several areas of the Test Lab per request from Phil Mutton/Bob Bennett. Results will take at least 7 days.
- IH: Chemical shipment arrived via Yellow Freight. Production Chemistry staff were unable to remove the plastic drums from the truck because they were not shipped on pallets. The chemical was originally shipped on pallets, but the shipper probably removed the pallets to allow for more storage. Recommendation will be to discontinue use of Yellow Freight, and to specify pallet packing
- IH: Test results are in and the mold has been identified as *stachybotrys chartarum*. This is probably the worst result that we could have expected. Facilities Management has the lead on the cleanup, so we are consulting with John Kelly to ensure that the cleanup is conducted properly. Gave John a list of air sampling methods yesterday and a list of respirators that the Safety Lab stocks. First job will be to give respirator training to the staff who will be involved in the cleanup. Second will be to give mold hazcom training. Look for a TOSP for this job.
- RCG: VTA initial installation of ADM-606 hardware completed. Initial meeting with SSG indicates some modifications to the set up may be beneficial.
- SSG: Concerned about the VTA radiation monitoring system: 5 units were purchased and there are 6 dewars. Each unit has three probes. If all monitoring points currently specified are used, all units will be used with no spares. As purchased, alarm configuration did not meet SSG specs document. SSG recommending that the installation be postponed until at least two more units (one plus spare) can be purchased. SSG and RCG to meet.

General

- RCG: implemented Daily Associate Coordinator (DAC) position on a trial run basis – DAC is rotating primary point of contact at 876-5342 for routing response to RadCon inquiries.
- SSG: PSS UPS maintenance contract out to two vendors for bids.
- IH: Transportainer update: Spoke with JT Kelley about the transportainer use. He visited the transportainer used by the Accelerator Electricians with Rusty Sprouse this week. Rusty was upset to find that power had been hooked up to the transportainer by the electricians. He will ensure that it is documented and properly installed. In the interim, JT Kelley will talk to Dana Arenius about transportainer use in the Cryogenics group.
- SSG: Kelly Mahoney contacted by Sal Spada of ARC consulting about adoption of safety standards in machine sector. Sent him the 1997 PSS survey form as a template. We will get copy of results.
- SSG: Started preparation for SSSSA class at UW in June.

Accelerator Division EH&S Highlights January 2004

- SSG: Started process of redefining SSG mission and priorities. Compiled list of over 50 tasks and projects (includes MPS and BELS) that are currently in the queue.
- IH: Also spoke with JT Kelley about the proposed tech facility for the site. He is putting me on the list for incorporating safety features such as floor drains for safety showers and local ventilation for soldering stations.
- RCG: Changed out TLDs for 4th quarter – approximately 40 still outstanding, completed the vast majority of dose investigations

Accidents, Incidents, Lessons Learned, and Tracking

From December – FEL Break Room Shock

On Tuesday, December 23 at approximately 12:45 AM, an FEL Scientist entered the FEL conference room/kitchen area in order to prepare some food for lunch. Upon noting that the refrigerator was pulled out and an unused electrical receptacle was dangling from the wall box, the scientist canvassed the FEL control room for information as to whether any electrical work was being performed in the kitchen area. Unable to determine the status of the receptacle, the scientist proceeded to plug in an appliance and felt a tingle between the right thumb and index finger (which were grasping the receptacle in question).

CAUSES OF INCIDENT: 1) ISMS Core Function 2 – Analyze Hazards, not implemented. Core Function 4 Perform Work Within Controls, not implemented. The energized GFCI receptacle was not secured in a workmanlike manner within the wall (i.e., not “dangling”) with the cover plate installed. 2) Work on energized circuitry was performed without a legitimate need, and proper prior authorization to perform such “hot” work was not obtained. 3) Employee attempted to utilize a receptacle that was clearly not in guidelines for acceptable use. 4) FEL employees were not notified that electrical work was being performed in the conference room/kitchen area.

LESSONS LEARNED include: 1) Do not touch electrical equipment that is not properly installed (i.e., receptacle secured to wall with cover plate installed.) 2) Ensure circuit is de-energized prior to performing electrical work, or obtain proper authority to perform “hot” work prior to performing work. 3) Secure a work place in a safe manner before leaving the area. Notify affected individuals of work that may impact them prior to commencing work.

Hazardous Waste / Material Control and Environmental Reporting (IH/RAD)

- silver calorimeters had ISOCs analysis performed
- Legacy” waste separated from Jefferson Lab waste
- Hall C diffuser identified as being useful as SBR
- Data call from Oak Ridge office to perform inventory of all sealed sources - source data with new format due 30 days from 1/13 – 80% complete
- RCG: assembled fourth quarter groundwater report

Training / Travel for Staff Development (All)

- SSG contacted by Roy Emerson of APS about design of new experimental area PSS. Roy has requested that SSG come to APS to review the proposed system in mid March.
- Erik Abkemeier and Keith Welch to MCNPX training class from 1/12-1/16
- K. Mahoney PD January 21 – February 4.
- C Krasche and S. Prior will be attending a one day course on Presenting Data and Information in Norfolk on Wednesday, January 28th

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- Keith Welch visited UVA to investigate use of HPAssistant software to assess needs for modifications for Jefferson Lab use
- Henry Robertson went to Sentara Careplex to look at video wall technology and switching systems similar to those proposed for the MCC upgrade. They are using an updated version of the video switcher we use now in the MCC.



EH&S Reporting Activities for January 2004

➤ Key Activities

- As of January 31st, there have been [83](#) days without a lost-time injury. The November 11th injury to an Accelerator Division EH&S Department technician had been a restricted duty injury and became a lost workday injury in January. There was one recordable injury in January. An Institute for SRF physicist had a January 28th injury due to slipping on ice in front of the Test Lab.
- The CY 2003 OSHA 300 Forms for JLab staff, service subcontractors, and construction subcontractors were prepared and posted in January. Current OSHA Recordkeeping regulations require posting from February through April rather than the previous posting period for the month of February. A summary of CY 2003 recordable injuries is attached.
- Christoph Leemann and Jim Murphy attended a January 23rd Office of Science (SC) Safety Summit Meeting. The main meeting topics were injury and near miss reduction, the recent OSHA/NRC lab visits, and presentations by senior DOE management.
- Jefferson Lab must establish an Environmental Management System (EMS) under a new DOE requirement. The EMS will interface with the Jefferson Lab Integrated Safety Management (ISM) System and must be in place by the end of CY 2005. EH&S Reporting will be playing a lead role in this effort. This requirement and the deadline for integration into the site program were discussed with the Director and the Director's Council in January. This triggered the recognized need to obtain assistance from an EMS-knowledgeable individual and the search for a Lab EMS champion. *[Mary Erwin, the Chief Financial Officer, has since agreed to serve as the site champion.]*
- The new site permit regarding preventing storm water pollution from construction activities became effective in late December. EH&S Reporting has worked with Facilities Management to ensure all permit requirements were in place prior to the start of the first applicable activity, the tree clearing activity for the new geothermal grid area (this equipment will heat and cool the office areas of the coming CEBAF Center Phase 1 Addition).

➤ Other Activities

- Office of Assessment and Accelerator Div. EH&S staff participated in a January 13th conference call with the other SC current national laboratories to discuss the draft DOE worker safety and health ("OSHA issues") rulemaking, 10 CFR 851. It was noted that the draft 10 CFR 851 does not contain an exemption for non-profit contractors (such as SURA) from civil penalties (monetary fines). Lab staff also participated in a DOE-wide 10 CFR 851 half-day videoconference on January 8th. 10 CFR 851 information was also provided to SURA corporate staff.
- A DOE occurrence report was generated and submitted for the December 23rd minor electrical shock in the FEL kitchen area. The event was reportable as a Category 3 "near-miss" occurrence (Category 3 is the fifth level of six DOE reporting levels). Event corrective actions were completed in January.

- The revised JLab occurrence reporting program (EH&S Manual Chapter 5300, and Appendices 5300-T1 and 5300-T2) was distributed for initial internal review by the EH&S Policy & Manuals Group. Applicable guidance from the new DOE occurrence reporting order has been incorporated.
- EH&S Reporting worked with Accelerator Division's EH&S Department and Institute for SRF in addition to Facilities Management staff to determine the cause for an early December low pH reading at the HRSD Test Lab sampling point. Record review documented that all processes that release special effluent to the sewer system were functioning properly (only releasing effluent with a pH of 7.0 or greater). Institute management and other participants determined that advance knowledge of a worsening situation was better than being surprised at the quarterly sampling time, so the installation of a pH monitor at an upstream manhole was to be evaluated. The meter would allow time for the Test Lab staff to investigate a potential problem before the system pH drops to the permit limit of 5.0.
- EH&S Reporting staff is working with Facilities Management staff to apply for an updated groundwater withdrawal permit with the Department of Environmental Quality. This permit will cover the groundwater that is collected from under the experimental halls and discharged to the surface. This dewatering operation maintains the structural integrity of the halls.
- **Work Smart Standards (WSS) Set**
 - EH&S Reporting is working with the Policy and Manuals Group to incorporate a review of WSS Set items along with EH&S Manual updates.
 - Proposed changes to the WSS Set, including using current ANSI standards instead of versions from the 1960s are working their way through the change process.
 - Proposed changes to EH&S Manual Chapter 2420 are being processed.
- **National Environmental Policy Act (NEPA)**
 - CEBAF and FEL Upgrade Environmental Assessment (EA)
 - EH&S Reporting continued to work with Project Management staff to prepare summaries for the activities planned for inclusion in the proposed 16 GeV EA.
 - EH&S Reporting is working with other laboratory staff to address other NEPA items, including actions related to the planned retention pond project.
- **Storm Water Permit Items**
 - Construction Activity under VAR 103277
 - The approved 'Working Draft of the Storm Water Pollution Prevention Plan' (SWP3) is being updated to incorporate a recently identified item.
 - Appendix B to the SWP3 is being developed to address the first phase of the North Connector Road project.
 - Best Management Practices under VAR 040079 (2 *sample items being addressed*)
 - EH&S Manual Chapter 6733 is being revised to document a site Storm Water Management Program, which will address permit and regulatory requirements.
 - A tracking system to document instances that could affect surface water quality is being developed by Facilities Management.

2003 INJURIES/ILLNESSES

<u>INJURY/ILLNESS DIAGNOSIS</u>	<u>DATE OF INJURY</u>	<u>REPORTABLE TO DOE</u>	<u>DIVISION/ JOB TITLE</u>	<u>LOST WORK DAYS AND/OR RESTRICTED WORK DAYS</u>
SMALL CORNEAL ABRASION, LEFT EYE	01/23/03	YES	ADMINISTRATION Facilities Management Subcontract employee (MRI, Contractor)	000RD 000LD
MUSCULAR BACK PAIN	03/10/03	YES	ACCELERATOR, Institute for SRF, Accelerator Engineering Associate	000RD 001LD
LEFT HIP CONTUSION	03/19/03	YES	DIRECTORATE Public Affairs Specialist	000RD 004LD (3/21-24)
LEFT ANKLE SPRAIN	03/24/03	YES	ACCELERATOR, Institute for SRF, Accelerator Engineering Associate	000RD 001LD
RIGHT EYE IRITIS, BLURRED VISION	05/07/03	YES	ACCELERATOR, Institute for SRF; SRF Cavity Production	013RD (5/8-20) 000LD
DISTAL AMPUTATION, THIRD, FOURTH, AND FIFTH DIGITS, RIGHT HAND	05/16/03	YES	ACCELERATOR, Cryogenics Accelerator Engineer	029RD (5/17-19; 5/22-31; 6/1-16) 002LD (5/20-21)
CHEMICAL BURNS TO FACIAL SKIN	06/13/03	YES	ACCELERATOR, SRF Institute Accelerator Technician	000RD 000LD
PULLED TENDON, RIGHT KNEE	07/30/03	YES	ADMINISTRATION Facilities Management Material Services Coordinator	000RD 000LD

2003 INJURIES/ILLNESSES

<u>NAME</u>	<u>INJURY/ILLNESS DIAGNOSIS</u>	<u>DATE OF INJURY</u>	<u>REPORTABLE TO DOE</u>	<u>DIVISION/ JOB TITLE</u>	<u>LOST WORK DAYS AND/OR RESTRICTED DAYS</u>
LACERATION, RIGHT WRIST	08/22/03	YES	PHYSICS Hall B, Senior Engineering Assistant	000RD 000LD	
LUMBAR STRAIN	08/26/03	YES	ACCELERATOR, SRF Institute Accelerator Engineer/Prototype	007RD (8/27-9/2) 000LD	
LEFT JAW LACERATION	09/26/03	YES	ADMINISTRATION Facilities Management Subcontractor, Electrical Equipment Inspection Technician (Potomac Testing, Inc., contractor)	000RD 000LD	
LEFT LOWER BACK PAIN	10/22/03	YES	ADMINISTRATION Facilities Management Shipping & Receiving Mail Room (J.K. Hill, contractor)	000RD 001LD	
LEFT EYE FOREIGN BODY	11/10/03	YES	ACCELERATOR Operations Dept. Safety Systems Safety Systems Technician	000RD 000LD	
LEFT SHOULDER CONTUSION	11/11/03	YES	ACCELERATOR EH&S Dept. Industrial Safety Materials Handler/Rigger	083RD (11/12-31/03; 1/1-5; 1/14-20/04; 2/9-29/04; 027LD (1/5-13; 1/21-31; 2/1-8/04	

Total: 14 Recordable Injuries

Policies & Manual Group Monthly Highlights

January 2004

Review of Work Smart Standards Chapter/Appendices

- Christina and I met with Linda Even and Jennifer Allen regarding the WSS/Chapter revision initiative and the EP Supplement. Linda proposed to have the EP Supplement follow the same review process as chapters currently undergo. When chapter comes up for review, the corresponding section of the supplement would be sent along for review. We reviewed a proposal on how to ensure changes to chapters are reflected in the Work Smart Standards. Linda provided a memo template and we discussed the possibility of making it web-accessible in the future. Linda also gave us suggestions on author re-assignments for the 6700 series chapters.

6300 Series, Ionizing Radiation

- The RadCon Manual will be integrated into the EH&S Manual as a supplement. As such, it will remain intact as a separate document but will be subject now to the same review process that chapters/appendices undergo. Reference to the RadCon Manual will be inserted into the 6300 series chapters where appropriate. An electronic copy of the RadCon Manual will be made available to JLab staff. Still need to work out how document will be stored electronically. The RadCon Manual also serves as JLab's Radiation Protection Plan and is presently undergoing review by the JRRP.
- Chapter 6311, *Prompt Ionizing Radiation Control*, will be due in June 2004 for its triennial review. Chapter author will be re-assigned prior to this. I have two candidates in mind but am willing to consider volunteers.

Director's Council Package Rev 5.6 – December 3, 2003

Included in the package were Chapters 2240 and 6410.

Update: Reconciled DC comments made to Chapter 6410 with the author. Revision package was uploaded to the EH&S Manual on February 3, 2004. All staff email sent on this date as well. See also EHSLOG #1193951.

Overdue Chapters

- There are 32 chapters that are overdue for review completion. Some of these chapters have not been reviewed since as early as August 1996.
- Received two change requests in Fall 2003 to chapters that have gone unanswered by the authors.

Other PMG Initiatives

- A copy of the December 2003 highlights can be viewed at:
http://docushare.jlab.org/Get/File-8113/December_2003_EH&S_PMG_Highlights.doc.
- Currently the status of each chapter/appendix for the purpose of updating the color-coded table. A copy of the current table can be viewed at
http://docushare.jlab.org/Get/File-8112/Color_coded_table.xls.
- I am working on an initiative to assign EH&S Chapters to line managers. I am also working to more equitably redistribute EH&S Chapters that must remain the province of EH&S staff.

Policies & Manual Group Monthly Highlights
January 2004

- I assigned Christina as the Vital Records Custodian for the EH&S PMG. She completed the training and we are scheduled to meet with Kim Kindrew next week to begin developing a list of PMG vital records.
- I developed a new set of performance objectives for Christina's PMG activities. Many of these objectives may eventually serve as a template for PMG standards of performance overall.
- Christina and I began discussion on developing training for new chapter authors on the review/revision process.
- Christina and I attended a one-day seminar on Presenting Data and Information in Norfolk, given by Edward Tufte.